College Preparatory Mathematics (CPM)
Algebra Connections, Algebra I

Degree of Evidence regarding the Standards for Mathematical Practice:

Moderate Evidence

Summary of evidence:

1. **Make sense of problems and persevere in solving them**. Chapter 4 is dedicated to students making connections between different representations. Teacher notes and the student text specifically address the connections (e.g. p. 278 – teacher resource), and students are asked to explain connections in multiple representations. Most questions ask students to explain or justify their answers. There are many open-ended questions. Understanding of the mathematical concept is at the forefront of the lessons, and making sense of concepts was fundamental in the chapters reviewed.
2. **Reason abstractly and quantitatively**. There are several application problems in the chapters reviewed. Symbols are introduced with explanation after students have spent a great deal of time understanding concepts (e.g. p. 282 – student text). Students are expected to use symbols to represent real-world applications. Students apply the notion of mathematical ideas many times before the algorithm or rule is generalized, and students work with concepts at length before ideas are generalized.
3. **Construct viable arguments and critique the reasoning of others**. Students are frequently asked to work with teams to justify their results (e.g. p. 142 - #4-8 d. – student text). There is some error analysis (e.g. activity 7-2 p. 512 – teacher resource), and there are many opportunities for justification. Most questions and activities require students to work in teams justifying answers and explaining conclusions. Frequently students are asked to communicate with others about their understanding of mathematics. Most, if not all, of the communication opportunities are referenced in both the teacher guide and student text.
4. **Model with mathematics**. The resource uses algebra tiles to model algebraic equations (e.g. p. 141 #4-5 – student text). Students are often asked to create mathematical models for real-world situations (e.g. p. 327-328 – student text). The connection among tables, graphs, equations, and situations is demonstrated frequently (e.g. Chapter 4).
5. **Use appropriate tools strategically.** Students are expected to use graphing calculators or other graphing technology to complete tasks (e.g. p. 160 – student text). There are notes on how to work with graphing calculators in the front of the teacher resource as well as in the student text. Technology other than the graphing calculator is encouraged (e.g. p. 509 – teacher resource). Technology is used to explore concepts (e.g. CBRs – p. 550 – teacher resource). In the chapters reviewed, there is no discussion of advantages or disadvantages of technology. Students are occasionally asked to compare different representations (e.g. p. 304 #7-81. d. – student text).
6. **Attend to precision.** In the chapters reviewed, students are constantly expected to communicate with their team and present findings to the class. Students are assigned roles for their groups, and sentence stems are given in the teacher resource to help prompt/guide student communication (e.g. p. 309 – teacher resource). In the chapters reviewed, examples of precise communication, for example a sample student conversation in the teacher's edition, were not present. Questions use accurate symbols and proper notation. Due to the design of the resource, there are many opportunities for communication; however, there are few examples that demonstrate precision.
7. **Look for and make use of structure**. Often students use patterns to generalize important mathematical concepts (e.g. p. 149 – student text). Understanding underlying mathematical ideas is central in the chapters reviewed. The activities and questions continuously build on the

student's prior learning.

8. **Look for and express regularity in repeated reasoning.** Students often use patterns to generalize and find mathematical models (e.g. p. 305 – student text), and students use patterns to create short cuts for factoring quadratics (e.g. p. 331 – student text). Patterns are used to help students see and make generalizations.